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BAKER & MCKENZIE LLP
PATENT DEPARTMENT
2001 ROSS AVENUE
SUITE 2300
DALLAS, TX 75201

EXAMINER	
CHOI, PETER Y	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,461	WILSON ET AL.	
	Examiner	Art Unit	
	Peter Y. Choi	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-25,51 and 52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-25,51 and 52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/22/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

NON-FINAL ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on February 22, 2007, has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 4-13 and 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what Applicant intends by fibers "directionally aligned in a plurality of crossing linear formations". If the fibers are directionally aligned, it is presumed that the fibers can not additionally be aligned in a plurality of crossing linear formations since the fibers, in totality, would no longer be directionally aligned.

Claim Rejections - 35 USC § 102/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4, 6-15, 17-25, 51, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by, or alternatively under 35 U.S.C. 103(a) as obvious over, US Pub. No. 2002/0121720 to Davies.

Regarding claims 1, 4, 6-13, and 51, Davies teaches a nonwoven fiber article, comprising a first surface comprising a pattern formed of nonwoven fibers directionally aligned in a plurality of crossing linear formations, and a second surface opposed to and coextensive with the first surface, the second surface comprising a collection of nonwoven fibers randomly dispersed (see entire document including paragraphs 0013, 0014, 0022-0025, 0073, 0083-0090, 0124, 0125, 0166-0168).

Regarding claims 1, 4, 6-13, and 51, Davies does not appear to teach that the nonwoven fibers comprising the first and the second surface are dewatered from a slurry to lay directionally aligned and randomly dispersed, respectively. Absent a showing to the contrary, it is Examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers). The patentability of a

product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The burden has been shifted to Applicants to show unobvious difference between the claimed product and the prior art product. The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if Applicants intend to rely on Examples in the specification or in a submitted declaration to show unobviousness, Applicants should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding claim 4, the fibers are selected from the group consisting of glass fibers, synthetic polymer fibers, ceramic and inorganic fibers, natural fibers, cellulosic fibers, and mixtures of any or all thereof (paragraphs 0018, 0022, 0155).

Regarding claim 6, each of the fibers comprises a length ranging from about 0.10 inches to about 1.5 inches (paragraphs 0014, 0090).

Regarding claims 7-10, the fiber article further comprises a binder material distributed among the directionally aligned and randomly dispersed fibers (paragraphs 0080, 0097, 0135, 0156).

Regarding claim 8, the fiber article comprises about 5-30% binder by weight (paragraph 0142).

Regarding claims 9 and 10, the binder material comprises an organic compound, wherein the organic compound is selected from the group consisting of acrylic latex, urea-formaldehyde, SBR latex, acrylic emulsions, and mixtures thereof (paragraphs 0080, 0081, 0097, 0140, 0156).

Regarding claim 11, the directionally aligned fibers constitute about 50% of the total thickness of the fiber article (paragraphs 0014, 0181, 0185).

Regarding claims 12 and 13, Davies does not appear to teach that the fiber article has a tear-strength under the Elmendorf Tear Test of about 393g mean tears when the fiber article has a weight of 1.6 lb/sq. and when 15% of the weight of the fiber article is binder material. Although the prior art does not disclose the claimed tear-strength, the claimed tear-strength is deemed to be inherent to the structure in the prior art since the Davies reference teaches an invention with a similar structural and chemical composition as the claimed invention (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers). Properties are the same when the structure and composition are the same. The burden is on the Applicants to prove otherwise.

Regarding claim 13, the overall thickness of the fiber article is about 0.035 inches, and the directionally aligned fibers comprise a thickness in the article of about 0.002 to 0.010 inches (paragraphs 0071, 0072, 0181, 0185). Additionally, it would have been obvious to one of ordinary skill in the reinforcing mat art to optimize the overall thickness and thickness of the reinforcing layer as the reference suggests that the thickness of the mat can be optimized based on the desire application (paragraphs 0099, 0145).

Regarding claims 14, 15, 17-25, and 52, Davies teaches a nonwoven fiber article, comprising a first surface comprising a pattern formed of nonwoven fibers horizontally dispersed in two or more predetermined directions, and a second surface opposed to and coextensive with the first surface, the second surface comprising a collection of nonwoven fibers randomly

dispersed (see entire document including paragraphs 0013, 0014, 0022-0025, 0073, 0083-0090, 0124, 0125, 0166-0168).

Regarding claims 14, 15, 17-25, and 52, Davies does not appear to teach that the nonwoven fibers comprising the first and the second surface are dewatered from a slurry to lay directionally aligned and randomly dispersed, respectively. Absent a showing to the contrary, it is Examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers).

Regarding claim 15, the fibers are selected from the group consisting of glass fibers, synthetic polymer fibers, ceramic and inorganic fibers, natural fibers, cellulosic fibers, and mixtures of any or all thereof (paragraphs 0018, 0022, 0155).

Regarding claim 17, each of the fibers comprises a length ranging from about 0.10 inches to about 1.5 inches (paragraphs 0014, 0090).

Regarding claims 18 and 19, the fiber article further comprises a binder material dispersed substantially throughout the fiber articles for binding the fibers in their dispersed directions (paragraphs 0080, 0097, 0135, 0156).

Regarding claim 19, the binder material comprises an organic compound, wherein the organic compound is selected from the group consisting of acrylic latex, urea-formaldehyde, SBR latex, acrylic emulsions, and mixtures thereof (paragraphs 0080, 0081, 0097, 0140, 0156).

Regarding claim 20, the fibers comprising the first surface are horizontally dispersed in linear formations extending in the two or more predetermined directions (paragraphs 0023, 0083, 0087).

Regarding claim 21, the directionally aligned fibers constitute about 50% of the total thickness of the fiber article (paragraphs 0014, 0181, 0185).

Regarding claims 22 and 23, Davies does not appear to teach that the fiber article has a tear-strength under the Elmendorf Tear Test of about 393g mean tears when the fiber article has a weight of 1.6 lb/sq. and when 15% of the weight of the fiber article is binder material. Although the prior art does not disclose the claimed tear-strength, the claimed tear-strength is deemed to be inherent to the structure in the prior art since the Davies reference teaches an invention with a similar structural and chemical composition as the claimed invention (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers).

Regarding claim 23, the overall thickness of the fiber article is about 0.035 inches, and the directionally aligned fibers comprise a thickness in the article of about 0.002 to 0.010 inches (paragraphs 0071, 0072, 0181, 0185). Additionally, it would have been obvious to one of ordinary skill in the reinforcing mat art to optimize the overall thickness and thickness of the reinforcing layer as the reference suggests that the thickness of the mat can be optimized based on the desire application (paragraphs 0099, 0145).

Regarding claim 24, the fibers of the first surface and the fibers of the second surface are collectively, horizontally dispersed to a substantially uniform thickness (paragraphs 0014, 0023, 0083, 0087, 0181, 0185).

Regarding claim 25, the binding material comprises about 5% to 30% of a total weight of the fiber article (paragraph 0142).

Regarding claim 51, the directionally aligned fibers comprising the first surface have an overall thickness substantially equal to a thickness of one of the linear formations (paragraphs 0013, 0014, 0022-0025, 0073, 0083-0090, 0124, 0125, 0166-0168).

Regarding claim 52, the nonwoven fibers horizontally dispersed in two or more predetermined directions comprising the first surface have a substantially uniform overall thickness when dispersed in two or more predetermined directions (paragraphs 0014, 0181, 0185, Figure 7, Figure 8, Figures 12-16).

In the event it is shown that Davies does not disclose the claimed invention with sufficient specificity, the invention is obvious because Davies discloses the claimed constituents and discloses that they may be used in combination.

6. Claims 1, 4, 6-12, 14, 15, 17-22, 24, 25, 51, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by, or alternatively under 35 U.S.C. 103(a) as obvious over, USPN 6,003,424 to Cordova.

Regarding claims 1, 4, 6-12, and 51, Cordova teaches a nonwoven fiber article, comprising a first surface comprising a pattern formed of nonwoven fibers directionally aligned in a plurality of crossing linear formations, and a second surface opposed to and coextensive with

the first surface, the second surface comprising a collection of nonwoven fibers randomly dispersed (see entire document including column 2 line 62 to column 3 line 7, column 4 lines 33-39, column 10 lines 40-67, column 11 lines 1-49).

Regarding claims 1, 4, 6-12, and 51, Cordova does not appear to teach that the nonwoven fibers comprising the first and the second surface are dewatered from a slurry to lay directionally aligned and randomly dispersed, respectively. Absent a showing to the contrary, it is Examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers).

Regarding claim 4, the fibers are selected from the group consisting of glass fibers, synthetic polymer fibers, ceramic and inorganic fibers, natural fibers, cellulosic fibers, and mixtures of any or all thereof (column 4 line 63 column 8 line 31).

Regarding claim 6, each of the fibers comprises a length ranging from about 0.10 inches to about 1.5 inches (column 10 lines 57-67).

Regarding claims 7-10, the fiber article further comprises a binder material distributed among the directionally aligned and randomly dispersed fibers (column 11 line 32 to column 12 line 34).

Regarding claim 8, the fiber article comprises about 5-30% binder by weight (column 12 lines 24-34).

Regarding claims 9 and 10, the binder material comprises an organic compound, wherein the organic compound is selected from the group consisting of acrylic latex, urea-formaldehyde, SBR latex, acrylic emulsions, and mixtures thereof (column 12 lines 12-23).

Regarding claim 11, the directionally aligned fibers constitute about 50% of the total thickness of the fiber article (Figure 1A).

Regarding claim 12, Cordova does not appear to teach that the fiber article has a tear-strength under the Elmendorf Tear Test of about 393g mean tears when the fiber article has a weight of 1.6 lb/sq. and when 15% of the weight of the fiber article is binder material. Although the prior art does not disclose the claimed tear-strength, the claimed tear-strength is deemed to be inherent to the structure in the prior art since the Cordova reference teaches an invention with a similar structural and chemical composition as the claimed invention (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers).

Regarding claims 14, 15, 17-22, 24, 25, and 52, Cordova teaches a nonwoven fiber article, comprising a first surface comprising a pattern formed of nonwoven fibers horizontally dispersed in two or more predetermined directions, and a second surface opposed to and coextensive with the first surface, the second surface comprising a collection of nonwoven fibers randomly dispersed (see entire document including column 2 line 62 to column 3 line 7, column 4 lines 33-39, column 10 lines 40-67, column 11 lines 1-49).

Regarding claims 14, 15, 17-22, 24, 25, and 52, Cordova does not appear to teach that the nonwoven fibers comprising the first and the second surface are dewatered from a slurry to lay directionally aligned and randomly dispersed, respectively. Absent a showing to the contrary, it

is Examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers).

Regarding claim 15, the fibers are selected from the group consisting of glass fibers, synthetic polymer fibers, ceramic and inorganic fibers, natural fibers, cellulosic fibers, and mixtures of any or all thereof (column 4 line 63 column 8 line 31).

Regarding claim 17, each of the fibers comprises a length ranging from about 0.10 inches to about 1.5 inches (column 10 lines 57-67).

Regarding claims 18 and 19, the fiber article further comprises a binder material dispersed substantially throughout the fiber articles for binding the fibers in their dispersed directions (column 11 line 32 to column 12 line 34).

Regarding claim 19, the binder material comprises an organic compound, wherein the organic compound is selected from the group consisting of acrylic latex, urea-formaldehyde, SBR latex, acrylic emulsions, and mixtures thereof (column 12 lines 12-23).

Regarding claim 20, the fibers comprising the first surface are horizontally dispersed in linear formations extending in the two or more predetermined directions (column 11 lines 32-49, column 12 lines 24-34).

Regarding claim 21, the directionally aligned fibers constitute about 50% of the total thickness of the fiber article (Figure 1A).

Regarding claim 22, Cordova does not appear to teach that the fiber article has a tear-strength under the Elmendorf Tear Test of about 393g mean tears when the fiber article has a weight of 1.6 lb/sq. and when 15% of the weight of the fiber article is binder material. Although the prior art does not disclose the claimed tear-strength, the claimed tear-strength is deemed to be inherent to the structure in the prior art since the Cordova reference teaches an invention with a similar structural and chemical composition as the claimed invention (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers).

Regarding claim 24, the fibers of the first surface and the fibers of the second surface are collectively, horizontally dispersed to a substantially uniform thickness (Figure 1A).

Regarding claim 25, the binding material comprises about 5% to 30% of a total weight of the fiber article (column 12 lines 24-34).

Regarding claim 51, the directionally aligned fibers comprising the first surface have an overall thickness substantially equal to a thickness of one of the linear formations (column 2 line 62 to column 3 line 7, column 4 lines 33-39, column 10 lines 40-67, column 11 lines 1-49).

Regarding claim 52, the nonwoven fibers horizontally dispersed in two or more predetermined directions comprising the first surface have a substantially uniform overall thickness when dispersed in two or more predetermined directions (Figure 1A).

In the event it is shown that Cordova does not disclose the claimed invention with sufficient specificity, the invention is obvious because Cordova discloses the claimed constituents and discloses that they may be used in combination.

Claim Rejections - 35 USC § 102

7. Claims 1, 4-9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 4,250,221 to Pfeffer.

Claims 1, 4-9, and 12 remain rejected as substantially set forth in the Final Rejection of November 27, 2006, sections 3 and 4.

Response to Arguments

8. Applicants' arguments filed February 22, 2007 have been fully considered but they are not persuasive. Applicants argue that fibrous yarns, strands and slivers are not formed from nonwoven fibers dewatered from a slurry. Additionally, Applicants argue that Pfeffer clear[ly] identifies the distinction between nonwoven chopped fibers and the fiber yarns, strands or slivers used in the mat.

Examiner respectfully disagrees with Applicants' arguments. The limitation added to amended claims 1 and 14, claiming that the nonwoven fibers are dewatered from a slurry is a product-by-process claim limitation. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (a nonwoven fiber article comprising a first and a second surface, the first surface comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. As Pfeffer discloses a nonwoven fiber article comprising a first and a second surface, the first surface

comprising directionally aligned fibers and the second surface comprising randomly dispersed nonwoven fibers, Pfeffer appears to anticipate the claimed invention.

Applicants appear to argue that the definitions of fiber yarns, strands or slivers are structurally different than nonwoven fibers dewatered from a slurry. However, Applicants have not submitted evidence that the fiber yarns, strands or slivers as set forth in Pfeffer are structurally different from the nonwoven fibers dewatered from a slurry. Applicants have set forth definitions of yarns, strands and slivers, but the definitions do not appear to structurally distinguish the yarns, strands and slivers formed by a wet method from the nonwoven fibers dewatered from a slurry. Thus, the product in Pfeffer appears to anticipate the claimed invention.

Claim Rejections - 35 USC § 103

9. Claim 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies, as applied to claims 1, 4, 6-15, 17-25, 51, and 52 above, and further in view of Pfeffer.

Regarding claims 5 and 15, Davies does not appear to teach that the fibers comprise a diameter ranging from about 0.00001 inches to about 0.0300 inches. Since Davies is silent with regards to the diameter of the fibers, it would have been necessary and thus obvious to look to the prior art for conventional materials. Pfeffer provides this conventional teaching showing that it is known in the reinforcement mat art to use fibers having diameters within the range of 9-16 microns (Pfeffer, column 6 lines 48-56). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the reinforcement mat of

Davies with the fiber diameter as taught by Pfeffer, motivated by the expectation of forming a durable conventional mat having high tear resistance.

Conclusion

USPN 5,872,067 to Meng is cited and made of record to show the state of the art of glass fiber strands.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Y. Choi whose telephone number is (571) 272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Peter Y. Choi
May 1, 2007

ANDREW PIZIALI
PRIMARY EXAMINER